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SERVICE INFORMATION

GENERAL INSTRUCTION

- Ignition timing cannot be adjusted since the CDI (Capacitive Discharge Ignition) unit is non-adjustable. If ignition timing is incorrect, check the CDI unit and AC generator and replace the faulty parts.

SPECIFICATIONS

Spark plug:	USA model	D8EA (NGK)
		X24ES-U (ND)
	Canada model	DR8ES-L (NGK)
		X24ESR-U (ND)

Plug gap: 0.6 – 0.7 mm (0.024 – 0.028 in)

Ignition timing:	
Initial	10° BTDC at 2,250 ± 250 rpm
Full advance	36° ± BTDC at 3,500 rpm
Headlight	6V 25W
Taillight	6V 3W
AC generator	50W/5,000 rpm

TROUBLESHOOTING

No Spark at Plug

1. Engine stop switch "OFF"
2. Poorly connected, broken or shorted wires
 - Between AC generator and ignition coil
 - Between CDI unit and engine stop switch
 - Between CDI unit and ignition coil
 - Between ignition coil and plug
 - Between pulse generator and CDI unit
3. Faulty ignition coil
4. Faulty CDI unit
5. AC generator faulty
6. Faulty pulse generator

Engine Starts but Runs Poorly

1. Ignition primary circuit
 - Faulty ignition coil
 - Loose or bare wire
 - Faulty pulse generator
2. Secondary circuit
 - AC generator faulty
 - CDI unit faulty
 - Faulty pulse generator
 - Faulty spark advancer



IGNITION SYSTEM

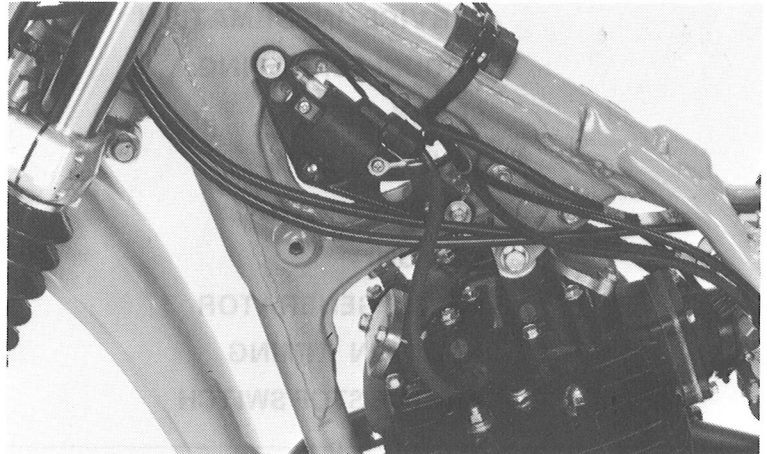
SPARK PLUG

For spark plug gap inspection and adjustment procedure, see page 3-7.

IGNITION COIL

REMOVAL

Remove the seat and fuel tank.
Disconnect the wire leads.
Remove the attaching bolts and remove the coil.



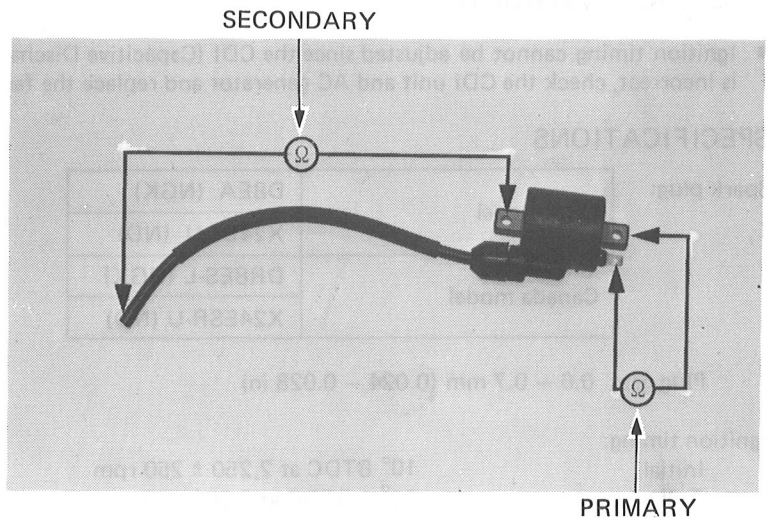
INSPECTION

Measure the resistance of the primary and secondary coil.

PRIMARY: 0.2–0.8Ω
SECONDARY: 2–6 kΩ

INSTALLATION

Install the ignition coil in the reverse order of removal:



AC GENERATOR

NOTE

It is not necessary to remove the stator coil to make this test.

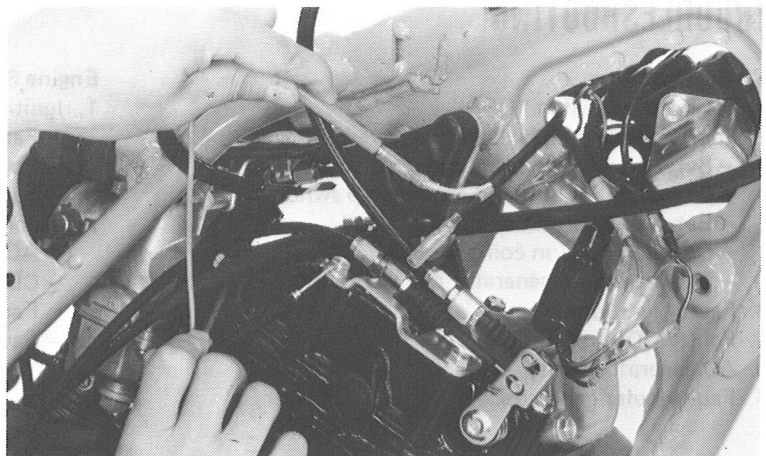
LIGHTING COIL INSPECTION

The lamp coil is correct if there is continuity between the blue wire and ground.

EXCITER COIL INSPECTION

The exciter coil is normal if there is continuity between the black/red wire and ground.

RESISTANCE: 100–450Ω





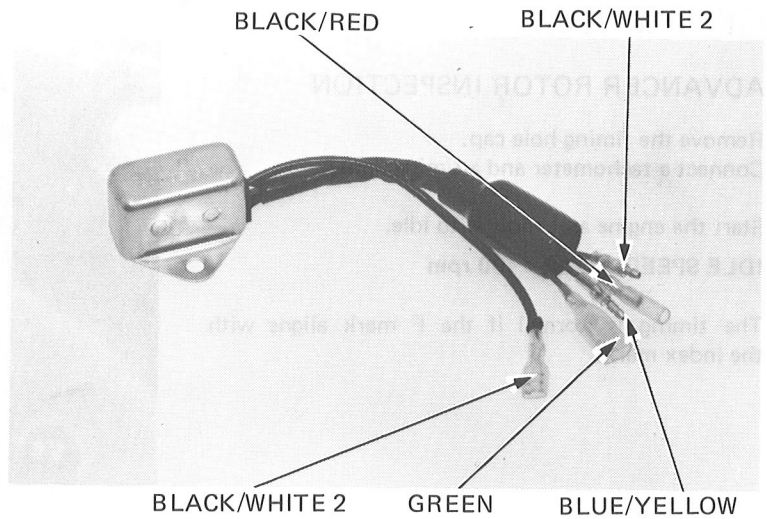
CDI UNIT

INSPECTION

Disconnect the wires and check continuity of the CDI terminals. Replace the CDI unit if the readings are not within the limits shown in the table.

NOTE

- The CDI unit is fully transistorized.
- For accurate testing, it is necessary to use a specified electric tester. Use of an improper tester may give false readings.
- Use a SANWA ELECTRIC TESTER (P/N 07308-0020000) or KOWA ELECTRIC TESTER (TH-5H)



Range:
 SANWA: x K Ω
 KOWA: x 100 Ω

+ Probe -	Black/Red	Green	Black/White ¹	Blue/Yellow	Black/White ²
Black/Red		∞	0.3–20	∞	∞
Green	1–30		10–100	∞	∞
Black/White ¹	∞	∞		∞	∞
Blue/Yellow	2–50	2–50	10–150		∞
Black/White ²	∞	∞	∞	∞	

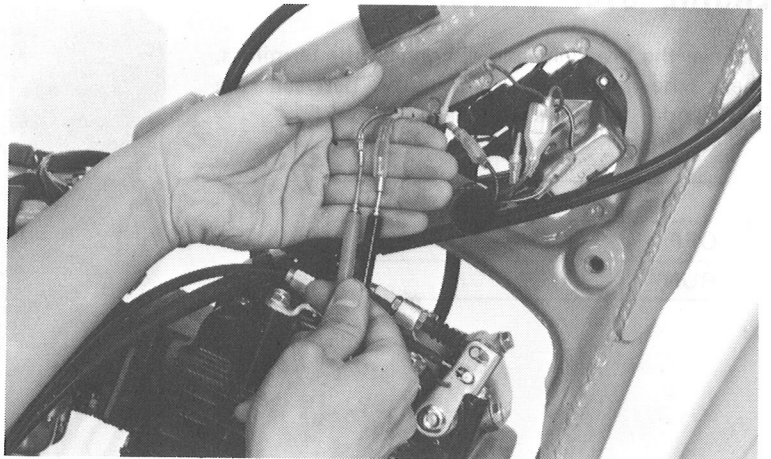
Black/White 1 Engine stop switch
 Black/White 2 Primary coil

PULSE GENERATOR

INSPECTION

Disconnect the pulse generator wire connector. Measure the resistance between green and blue/yellow.

RESISTANCE: 90–110 Ω





IGNITION SYSTEM

IGNITION TIMING

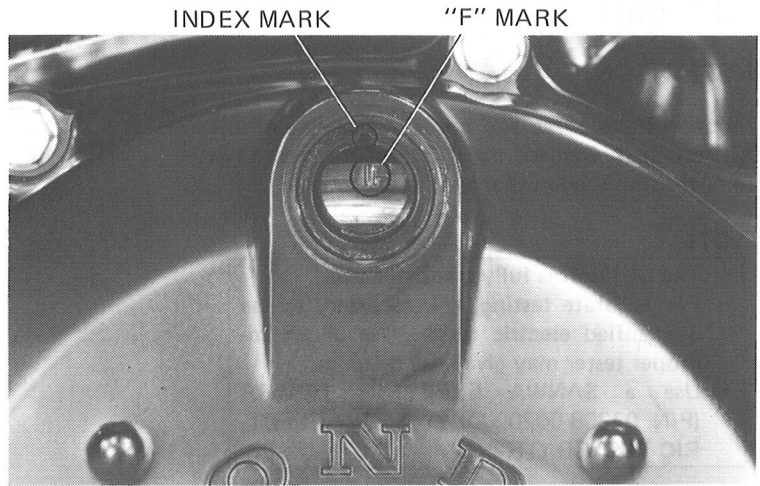
ADVANCER ROTOR INSPECTION

Remove the timing hole cap.
Connect a tachometer and a timing light.

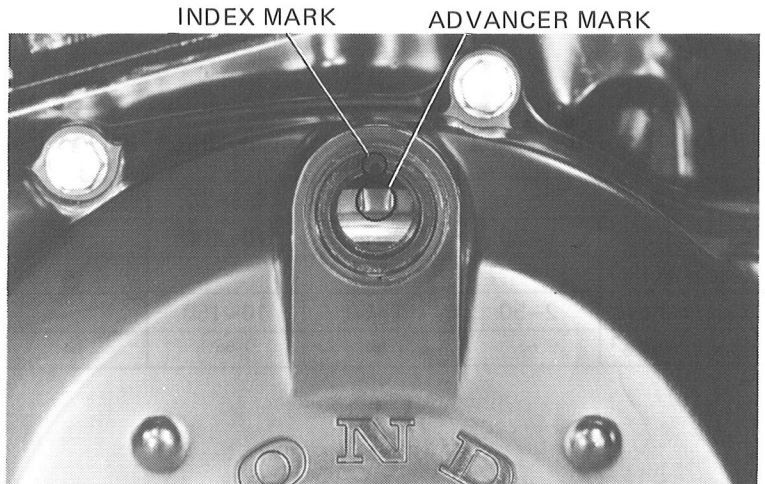
Start the engine and allow it to idle.

IDLE SPEED: 1,200 ± 100 rpm

The timing is normal if the F mark aligns with the index mark.



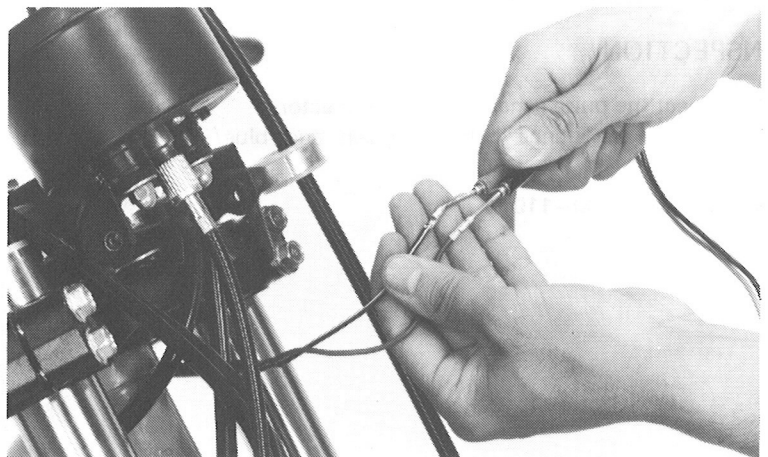
The index mark should be between the advance marks at 3,500 rpm.



ENGINE STOP SWITCH

Remove the headlight and disconnect the terminals.
Check the switch for continuity between the BK/W and G terminals with the switch OFF.

	Bk/W	G
OFF		
RUN		





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XR500R

17. TECHNICAL FEATURES

PRO-LINK REAR SUSPENSION	17-1
REED VALVE	17-4

17



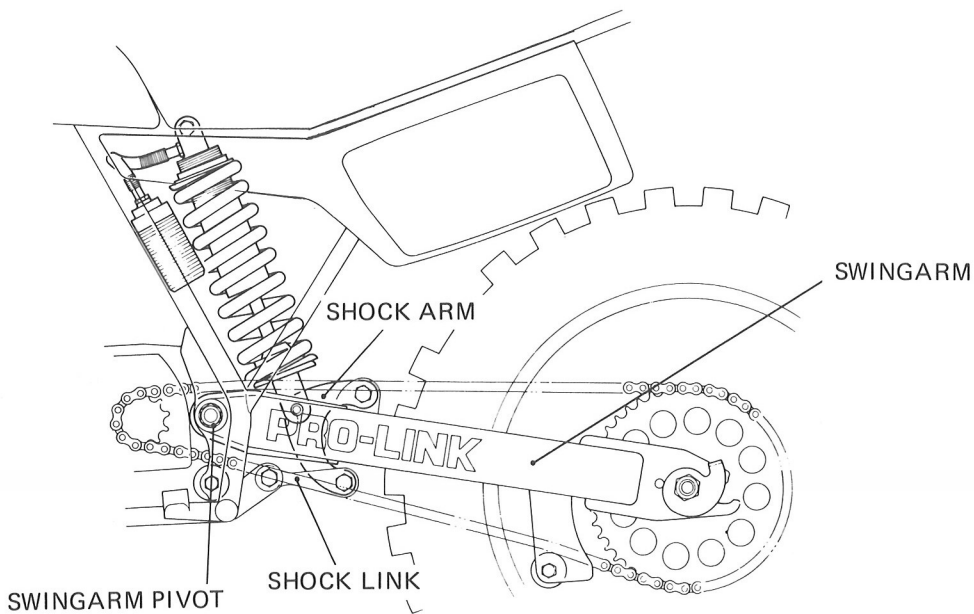
PRO-LINK REAR SUSPENSION

INTRODUCTION

The Pro-Link suspension system is one shock absorber connected to the swingarm and lower frame with a shock arm and shock link. The shock and linkage are located in front of the rear tire.

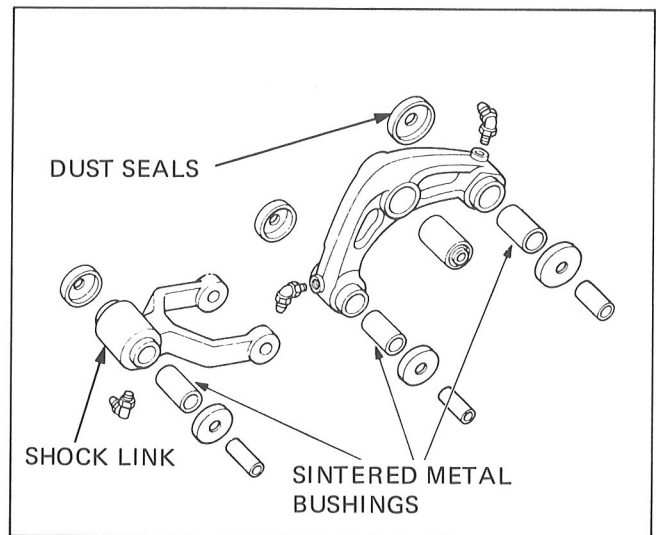
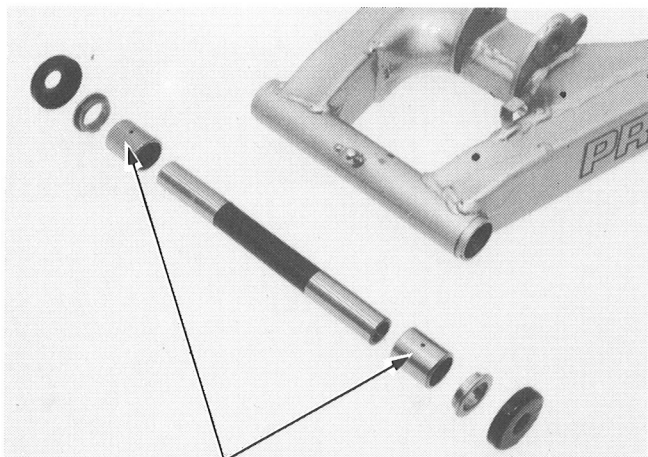
The carefully designed shock arm and shock link, combined with the shock's matched spring and damping rates provides what is known as a "progressive rising rate" during wheel travel, providing soft springing and damping during initial wheel travel and increasing spring and damping rates proportional to increasing wheel travel.

This progressive rising rate enables the rear wheel to stay on the ground, giving the rider the best possible control over rough terrain.



The swing arm pivots on two needle bearings for smooth up and down movement of the wheel.

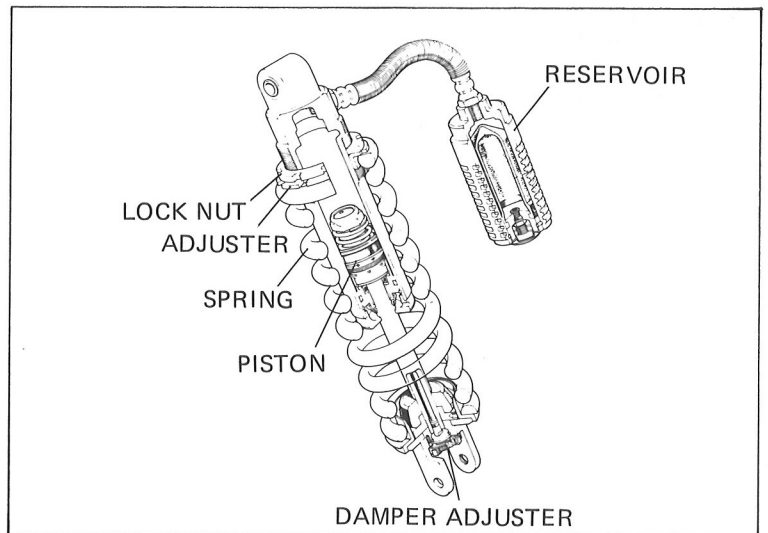
Low maintenance sintered metal bushings are used at the pivot points for the shock arm and shock link. Dust seals protect these bushings from excessive wear caused by dust and dirt.





The shock absorber has a finned oil/nitrogen remote reservoir to cool the shock oil and prevent frothing. The nitrogen is separated from the oil with a rubber bladder.

There are four damping adjustment positions and the spring preload can be adjusted softer or stiffer.

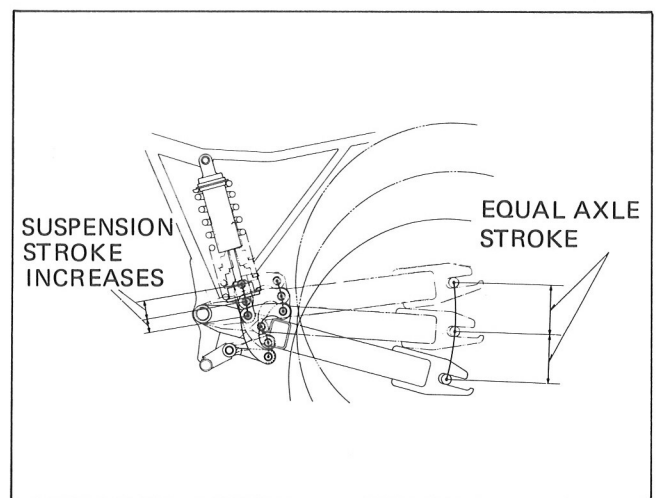
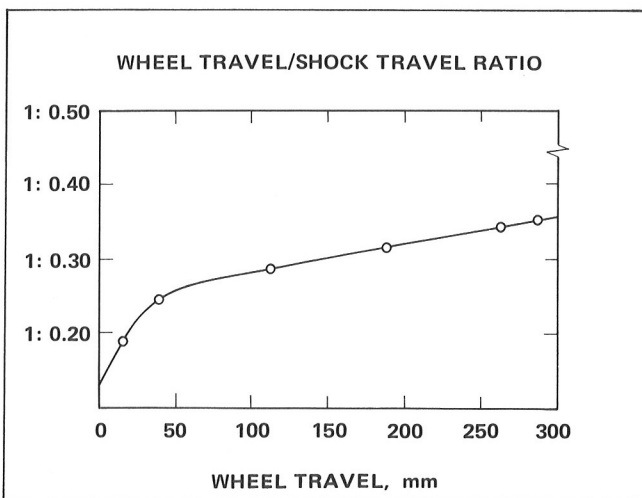


OPERATION

As the wheel and swingarm are driven up by bumps, the shock absorber is compressed by the shock arm which is held in a precise arc by the shock link. As wheel travel increases the shock arm rises above the swingarm, proportionately increasing absorber compression.

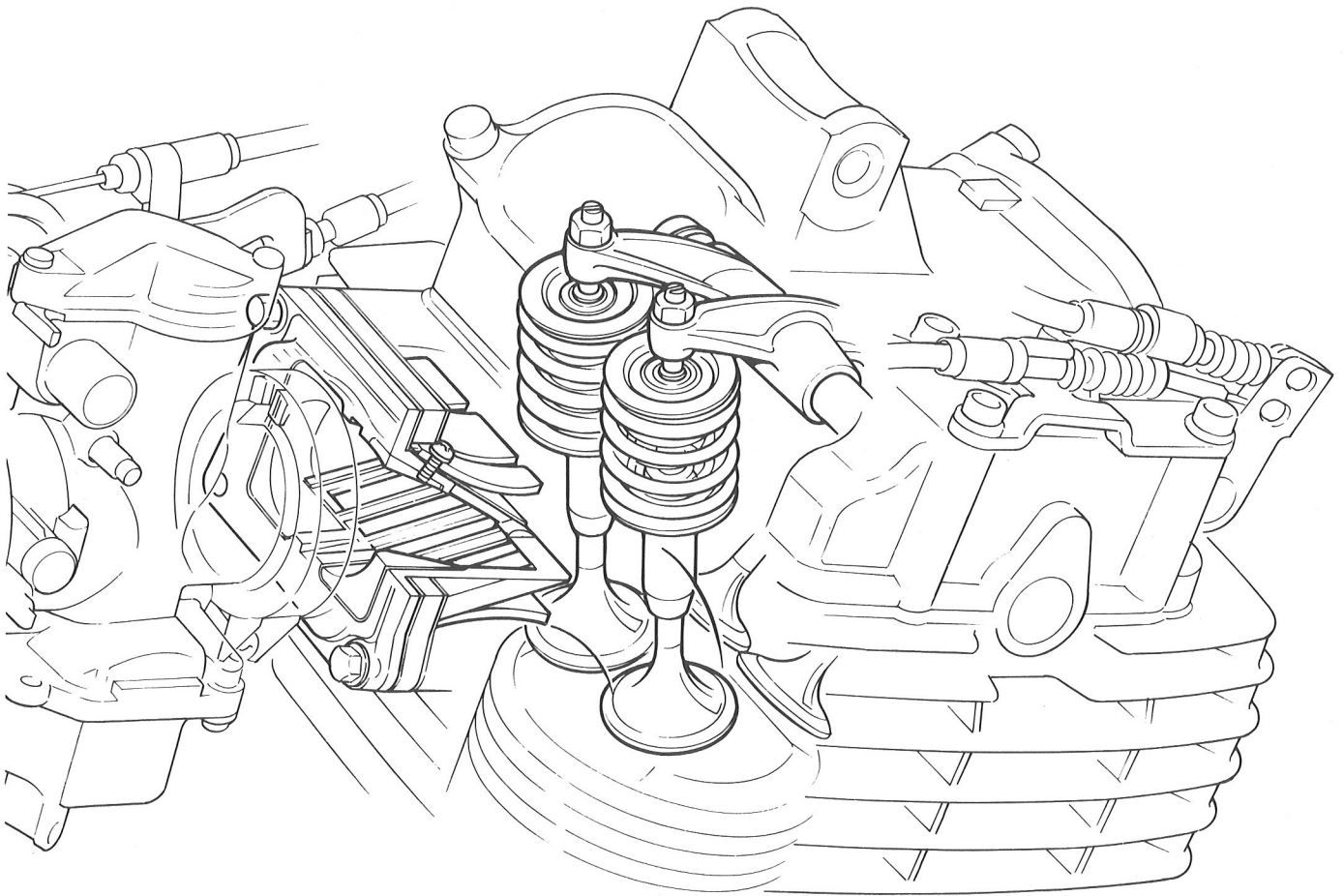
This provides the required progressive rise rate; the shock absorber moves only about one-fourth of wheel travel at the beginning and moves about one-third of wheel travel near the end.

This graph shows the wheel travel/shock travel ratio through the entire stroke of a XR500R Pro-Link system.



REED VALVE

The reed valve is placed in the intake tract between the carburetor and intake valves. It allows the engine to develop high torque at low and medium engine speeds.

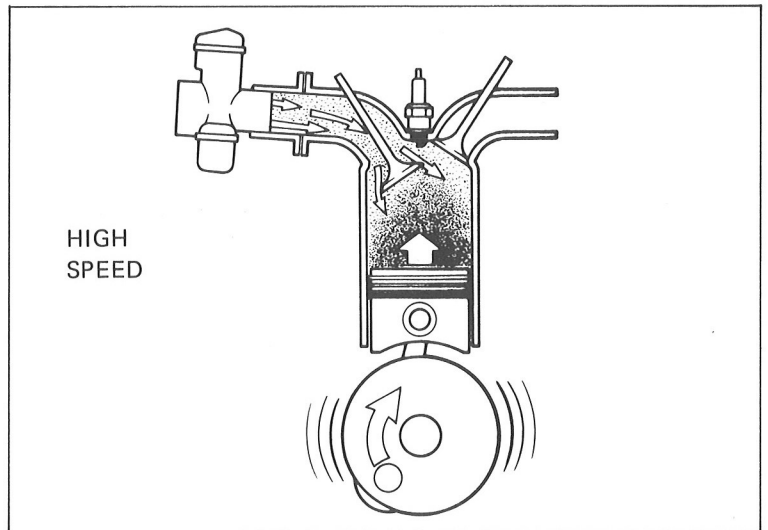




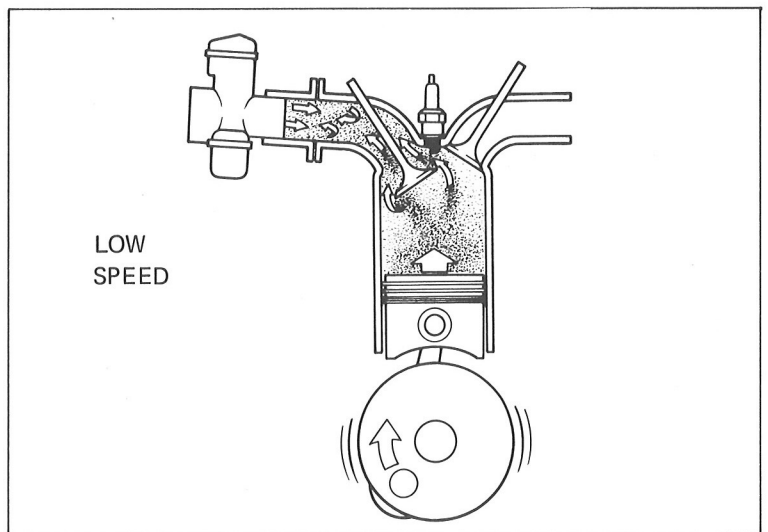
1. High torque at low and medium speeds

In the 4-stroke engine, intake valve closing is timed to prevent any air-fuel mixture in the cylinder from being forced back into the intake tract.

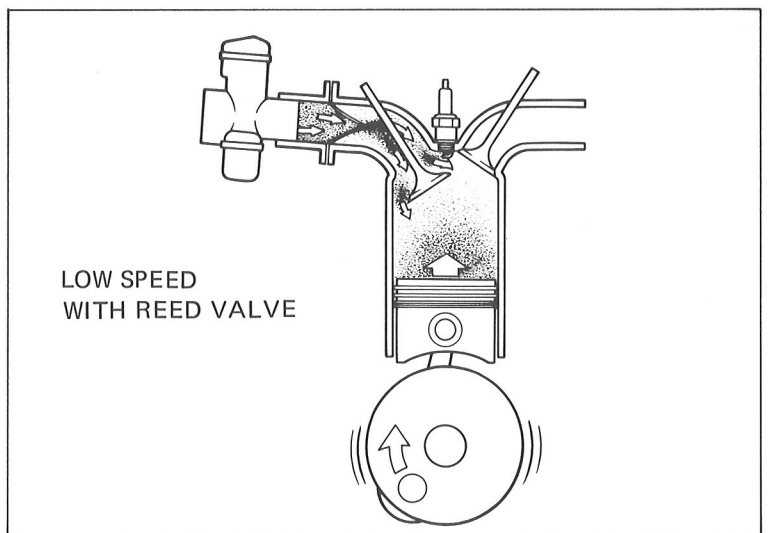
This is usually not a problem at high speed due to the high velocity of the air-fuel charge flowing past the intake valve into the cylinder.



However, at low and medium speeds, part of the air-fuel charge is forced back into the intake tract because of the reduced velocity of the air-fuel charge.



The reed valve prevents the air-fuel mixture from being forced back into the intake tract at low and medium speeds. This allows the engine to develop maximum torque at these speeds.





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XR500R

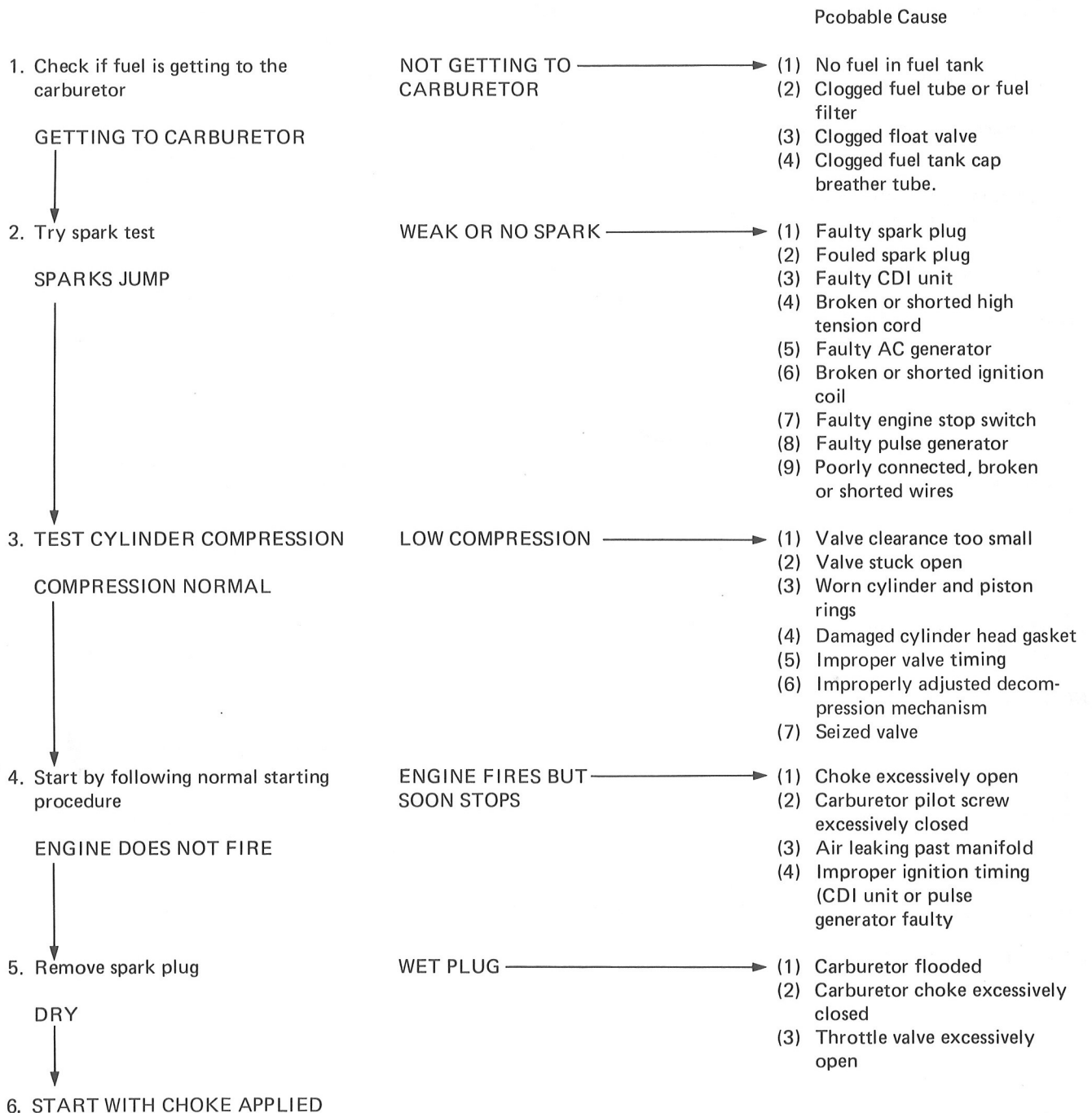
MEMO



18. TROUBLESHOOTING

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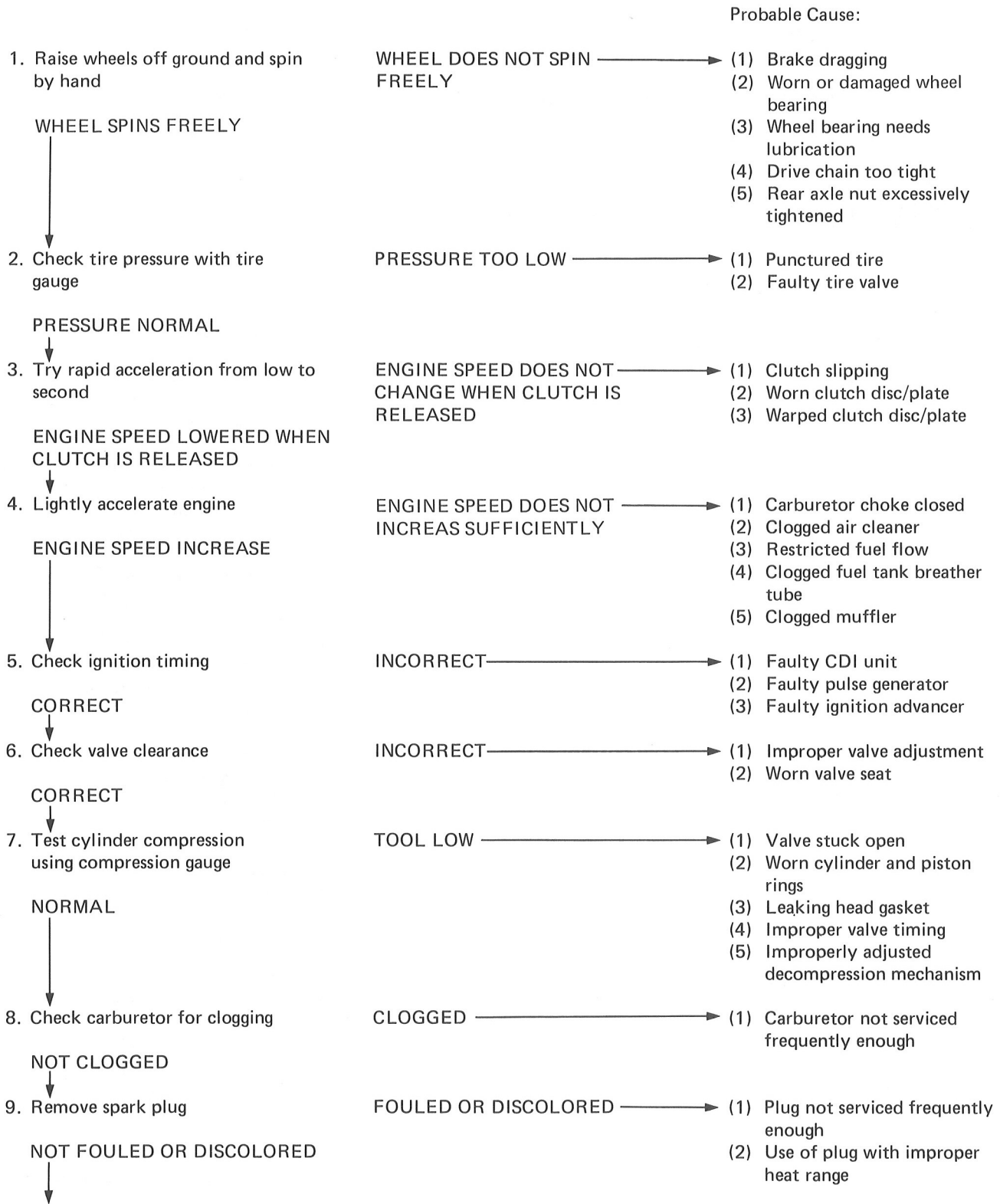
ENGINE DOES NOT START OR IS HARD TO START





TROUBLESHOOTING

ENGINE LACKS POWER





10. Remove oil level gauge and check oil level and fouling

CORRECT

11. Remove cylinder head cover and inspect lubrication

VALVE TRAIN LUBRICATED PROPERLY

12. Check if engine overheats

13. Accelerate or run at high speed

ENGINE DOES NOT KNOCK

OIL LEVEL INCORRECT → (1) Oil level too high
(2) Oil level too low
(3) Contaminated oil

VALVE TRAIN NOT LUBRICATED PROPERLY → (1) Clogged oil passage
(2) Clogged oil control orifice

OVERHEATED → (1) Excessive carbon build-up in combustion chamber.
(2) Use of improper quality of fuel
(3) Clutch slipping
(4) Fuel air mixture too lean

ENGINE KNOCKS → (1) Worn piston and cylinder
(2) Fuel air mixture too lean
(3) Use of improper grade of fuel
(4) Excessive carbon build-up in combustion chamber
(5) Ignition timing too advanced (Faulty CDI unit or advancer)

POOR PERFORMANCE AT LOW AND IDLE SPEEDS

1. Check ignition timing and valve clearance

CORRECT

2. Check carburetor pilot screw adjustment

CORRECT

3. Check if air is leaking past manifold

NOT LEAKING

4. Try spark test

GOOD SPARK

Probable Cause:

INCORRECT → (1) Improper valve clearance
(2) Improper ignition timing (Faulty CDI unit or spark advancer)

INCORRECT → (1) Fuel-air mixture too lean (To correct, screw out)
(2) Fuel-air mixture too rich (To correct, screw in)

LEAKING → (1) Deteriorated insulator O-ring
(2) Loose carburetor

WEAK OR INTERMITTENT SPARK → (1) Faulty, carbon or wet fouled spark plug
(2) Faulty CDI unit
(3) AC generator faulty
(4) Faulty ignition coil
(5) Faulty pulse advancer



TROUBLESHOOTING

POOR PERFORMANCE AT HIGH SPEED

Probable Cause

1. Check ignition timing and valve clearance

INCORRECT

- (1) Improper valve clearance
- (2) Faulty CDI unit
- (3) Faulty pulse generator
- (4) Faulty advancer

CORRECT

2. Disconnect fuel tube at carburetor

FUEL FLOW RESTRICTED

- (1) Lack of fuel in tank
- (2) Clogged fuel line
- (3) Clogged fuel tank breather tube
- (4) Clogged fuel cock

FUEL FLOWS FREELY

3. Remove carburetor and check for clogged jet

CLOGGED

- (1) Clean

NOT CLOGGED

4. Check valve timing

INCORRECT

- (1) Cam sprocket not installed properly

CORRECT

5. Check valve spring tension

WEAK

- (1) Faulty spring

NOT WEAKENED

POOR HANDLING

Check tire pressure

Probable Cause

1. If steering is heavy

- (1) Steering head adjuster too tight
- (2) Damaged steering cones or steel balls

2. If either wheel is wobbling

- (1) Excessive wheel bearing play
- (2) Distorted rim
- (3) Improperly installed wheel hub
- (4) Swing arm pivot bushing excessively worn
- (5) Distorted frame
- (6) Improper drive chain tension or adjustment
- (7) Loose swing arm pivot bolt
- (8) Loose engine hanger bolt

3. If the motorcycle pulls to one side

- (1) Misadjusted shock absorber
- (2) Front and rear wheels not aligned
- (3) Bent front fork
- (4) Bent swing arm



INTRODUCTION

This Honda Shop Manual addendum contains information for the 1982 XR500R.

ALL INFORMATION, ILLUSTRATIONS, DIRECTIONS AND SPECIFICATIONS INCLUDED IN THIS PUBLICATION ARE BASED ON THE LATEST PRODUCT INFORMATION AVAILABLE AT THE TIME OF APPROVAL FOR PRINTING. HONDA MOTOR CO., LTD. RESERVES THE RIGHT TO MAKE CHANGES AT ANY TIME WITHOUT NOTICE AND WITHOUT INCURRING ANY OBLIGATION WHATEVER.

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SERVICE PUBLICATIONS OFFICE

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1. GENERAL INFORMATION

SPECIFICATIONS

This addendum lists only specifications which are different for 1982. Refer to the base shop manual for information not covered here.

FRAME	Front fork oil capacity	395 cc (13½ oz)	
ELECTRICAL	Spark plug	Standard	DR8ES-L (NGK) or X24ESR-U (ND)
		For cold climate	DR7ES (NGK) or X22ESR-U (ND)
		For extended high-speed riding	DR8ES (NGK) or X27ESR-U (ND)



TORQUE VALUES

This addendum lists only torque values which are different from 1981. Refer to the base shop manual for values not shown here.

ENGINE

Item	Qty	Thread Dia, mm	Torque N· (kg-m, ft-lb)
Cylinder head cover bolt	2	7	13-17 (1.3-1.7, 9-12)
AC generator, stator coil bolt	2	6	8-12 (0.8-1.2, 6-9)

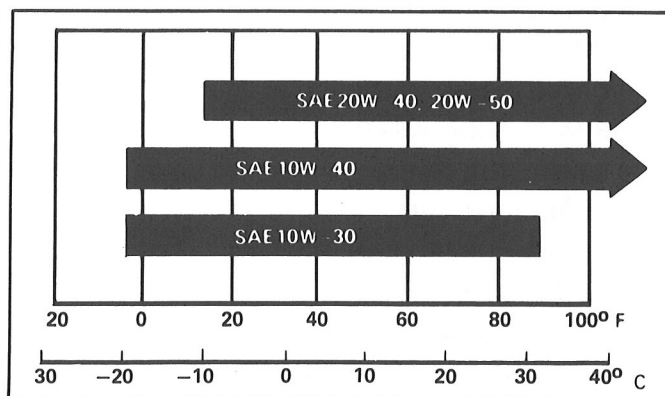
FRAME

Item	Qty	Thread Dia, mm	Torque N· (kg-m, ft-lb)	
Engine hanger	8 mm bolt	4	8	30-37 (3.0-3.7, 22-27)
	10 mm bolt	3	10	55-65 (5.5-6.5, 40-47)
	12 mm bolt	2	12	90-100 (9.0-10.0, 65-72)

2. LUBRICATION

Recommended oil

Use HONDA 4-STROKE OIL or equivalent.
API SERVICE CLASSIFICATION: SE or SF
VISCOSITY: SAE 10W-40





3. MAINTENANCE

MAINTENANCE SCHEDULE

REGULAR SCHEDULE

Perform the PRE-RIDE INSPECTION in the Owner's Manual at every maintenance period.

- I : Inspect, Clean, Adjust, Lubricate or Replace if Necessary.
 C : Clean
 R : Replace
 A : Adjust
 L : Lubricate

ITEM	FREQUENCY	BREAK-IN MAINTENANCE	REGULAR SERVICE INTERVAL
		350 km (200 mi)	1,600 km (1,000 mi)
ENGINE OIL	NOTE	R	R, every 3,000 km (1,800 mi)
* ENGINE OIL FILTER SCREEN			C
AIR CLEANER	NOTE	C	C, every 800 km (500 mi)
* FUEL FILTER AND FUEL LINE		I	I
SPARK PLUG		I	I
* VALVE CLEARANCE		I	I
* STARTER DECOMPRESSOR		I	I
* THROTTLE OPERATION		I	I
* CARBURETOR IDLE SPEED		I	I
* CARBURETOR CHOKE		I	I
** BALANCER CHAIN TENSION		I	A
DRIVE CHAIN	NOTE	I, L	I, L every 500 km (300 mi)
DRIVE CHAIN GUIDE SLIDER		I	I
DRIVE CHAIN SLIDER		I	I
* BRAKE SHOE WEAR			I
BRAKE SYSTEM		I	I
* HEADLIGHT AIM		I	I
CLUTCH FREE PLAY		I	I
* SUSPENSION		I	I
SWINGARM BEARINGS		I, L	I, L
REAR SUSPENSION LINKAGE		I, L	I, L
* REAR SHOCK ABSORBER UPPER BUSHING			I, L
** SPARK ARRESTER			C
* NUTS, BOLTS, FASTENERS	NOTE	I	I
** WHEELS/SPOKES	NOTE	I	I
** STEERING HEAD BEARING		I	I

* SHOULD BE SERVICED BY AN AUTHORIZED HONDA DEALER, UNLESS THE OWNER HAS THE PROPER TOOLS AND IS MECHANICALLY QUALIFIED.

** IN THE INTEREST OF SAFETY, WE RECOMMEND THESE ITEMS BE SERVICED ONLY BY AN AUTHORIZED HONDA DEALER.

NOTE : Service more frequently when ridden in wet or dusty conditions.



SPARK PLUG

For 1982, resistor type spark plugs are specified. They are identified in the table.

Disconnect the spark plug cap and remove the spark plug.

Visually inspect the spark plug electrodes for wear. The center electrode should have a constant thickness. Discard the spark plug if the electrode is worn or if the insulator is cracked or chipped. If the spark plug is in good condition and the deposits can be removed by sandblasting, the spark plug can be reused.

Measure the gap with a wire gauge and adjust it, if necessary, by bending the side electrode.

SPARK PLUG GAP: 0.6-0.7 mm (0.024-0.028 in)

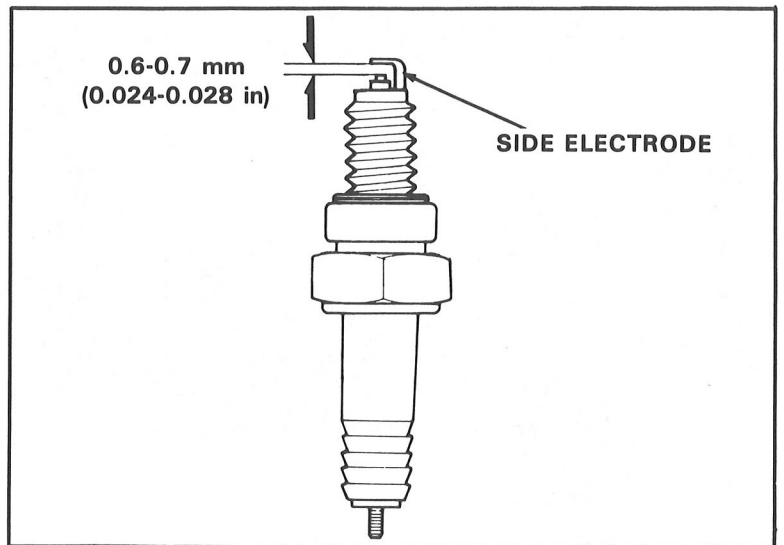
Check the spark plug sealing washer and replace it with a new one if it is damaged.

Install the washer on the spark plug and thread the plug into the head by hand to prevent cross-threading. After hand tightening, tighten the plug an additional 1/2 turn with a spark plug wrench to compress the washer.

Connect the spark plug cap.

RECOMMENDED SPARK PLUG

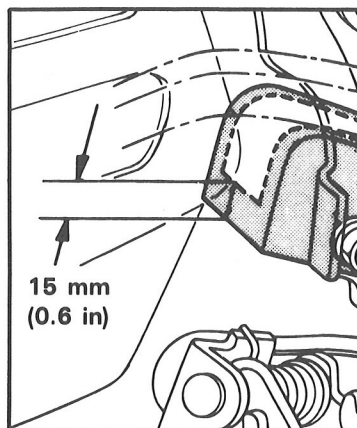
Standard	DR8ES-L (NGK) or X24ESR-U (ND)
For cold climate	DR7ES (NGK) or X22ESR-U (ND)
For extended high-speed riding	DR8ES (NGK) or X27ESR-U (ND)



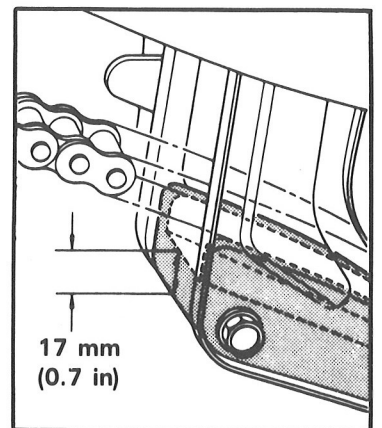
DRIVE CHAIN GUIDE SLIDERS

Inspect the chain guide sliders and replace them if the depth of the chain grooves is greater than specified.

**SERVICE LIMIT: FRONT: 15 mm (0.6 in)
REAR: 17 mm (0.7 in)**



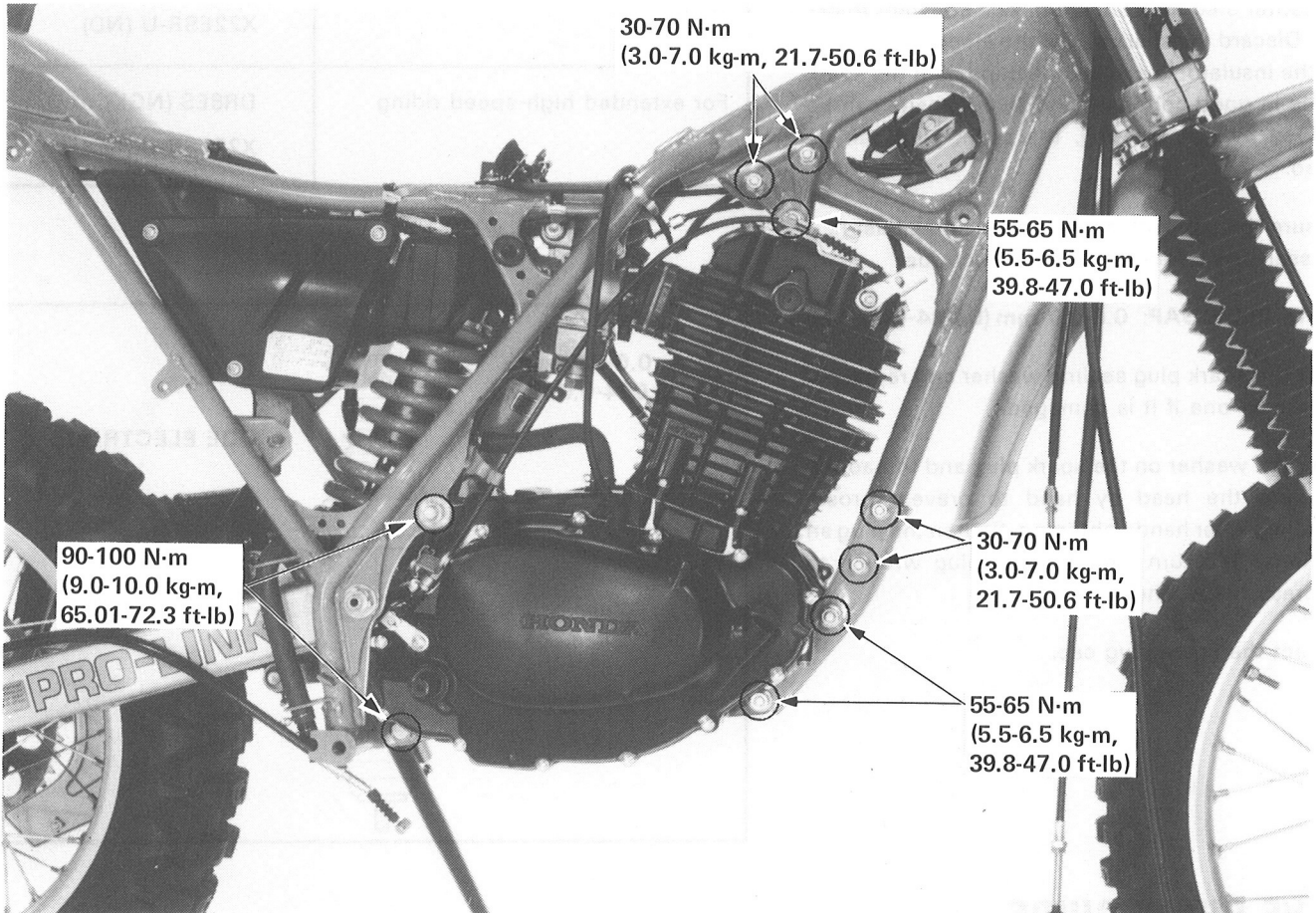
FRONT



REAR

4. ENGINE REMOVAL/ INSTALLATION

Engine mounting bolt torque values are changed for 1982 and they are shown below. Refer to page 5-4 for installation instructions.





5. CYLINDER HEAD

CAMSHAFT

For 1982, the camshaft chain tensioner is automatic and requires no adjustment.

REMOVAL

Insert a 2 mm pin into the hole at the top of the tensioner wedge A.

NOTE

A straightened No. 2 paperclip can be used as a pin.

Pull up on the pin and at the same time compress the tensioner. When the pinhole clears the top of the tensioner holder, push the pin through the hole to lock the tensioner in place.

NOTE

It may be necessary to loosen the tensioner mounting bolt on the rear of the cylinder.

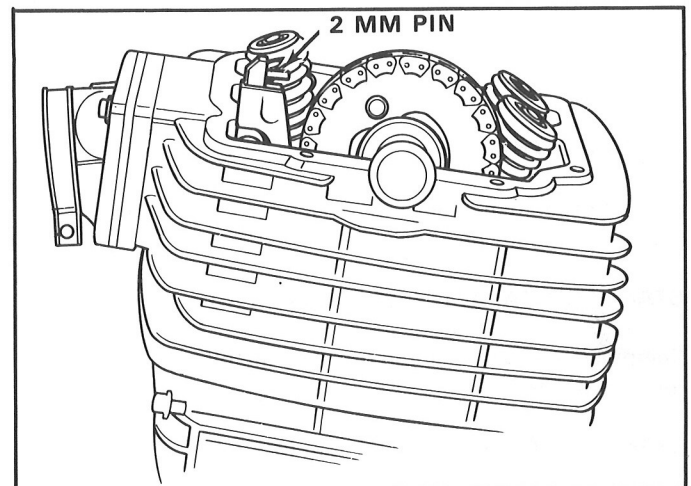
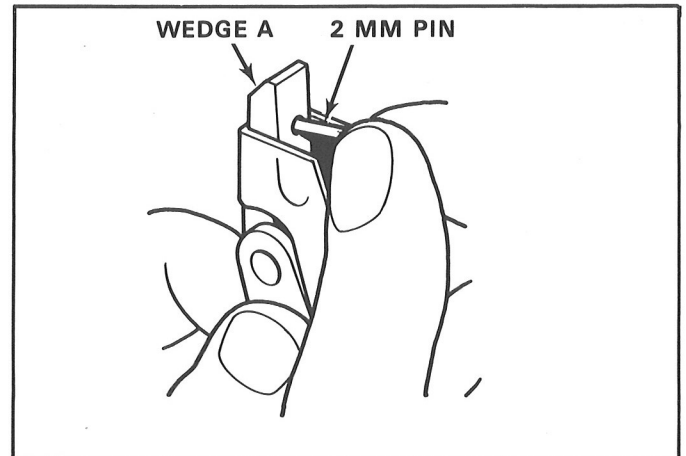
Refer to page 6-6 for the remaining camshaft removal steps.

INSTALLATION

Refer to page 6-18, and install the camshaft as described. When installation is complete, remove the pin from the tensioner wedge. The tensioner will automatically apply correct tension to the camshaft chain.

NOTE

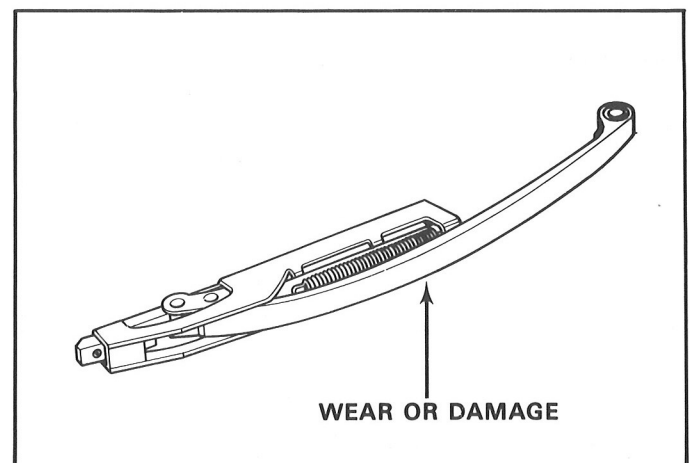
It may be necessary to press the wedge down to release it.



6. CRANKCASE

CAMSHAFT CHAIN TENSIONER

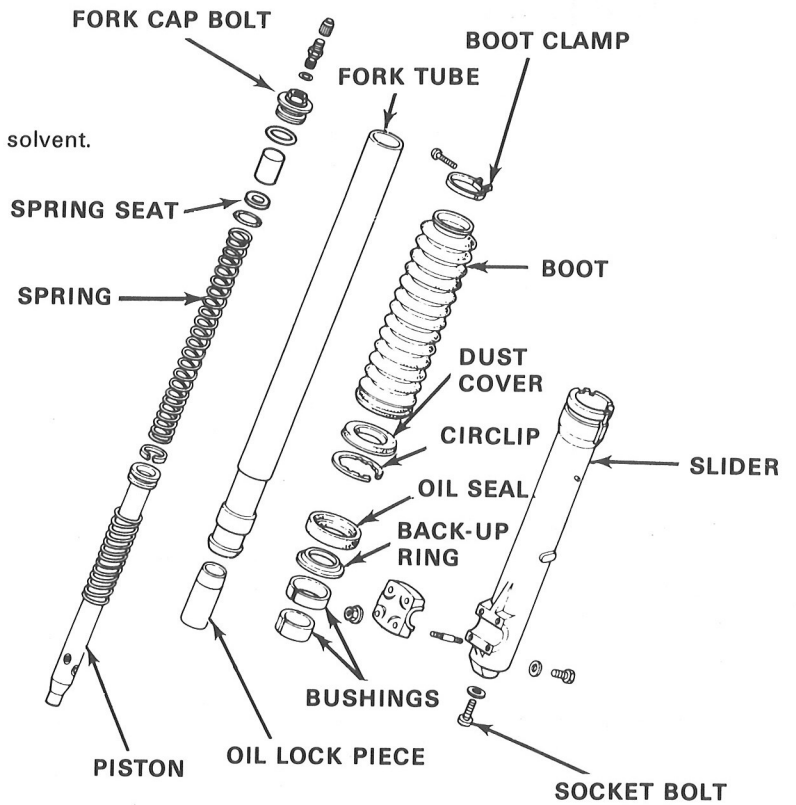
When the crankcase is disassembled, inspect the camshaft chain tensioner for wear or damage. Replace it if it is not in good condition.



7. FRONT FORKS

ASSEMBLY

Clean all parts with non-flammable or high flash point solvent.



FRONT FORK OIL

Fork oil capacity has been increased for 1982. Pour in the specified amount of ATF.

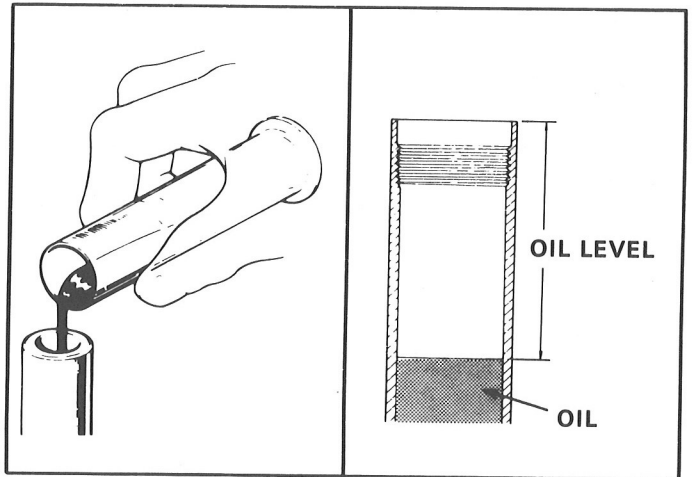
STANDARD CAPACITY: 395 cc (13.5 oz)

Compress the front fork and measure the oil level from the top of the tube.

STANDARD OIL LEVEL: 156 mm (6 1/8 in)

RECOMMENDED OIL LEVEL: 146-186 mm (5 3/4-7 3/8 in)

To obtain different damping characteristics, change the amount of oil in the forks.



Maximum level	146 mm (5 3/4 in)	Slightly stiffer spring effect when fork is charged with standard air pressure.
Minimum level	186 mm (7 3/8 in)	Slightly softer spring effect when fork is charged with standard air pressure.

STANDARD AIR PRESSURE: 0 kg/cm² (0 kPa, 0 psi)

RECOMMENDED AIR PRESSURE RANGE: 0-1 kg-m (0-98 kPa, 0-14 psi)



INTRODUCTION

This section contains service information for the 1982 XR500R European and general type.

Refer to base shop manual for information not included in this section.

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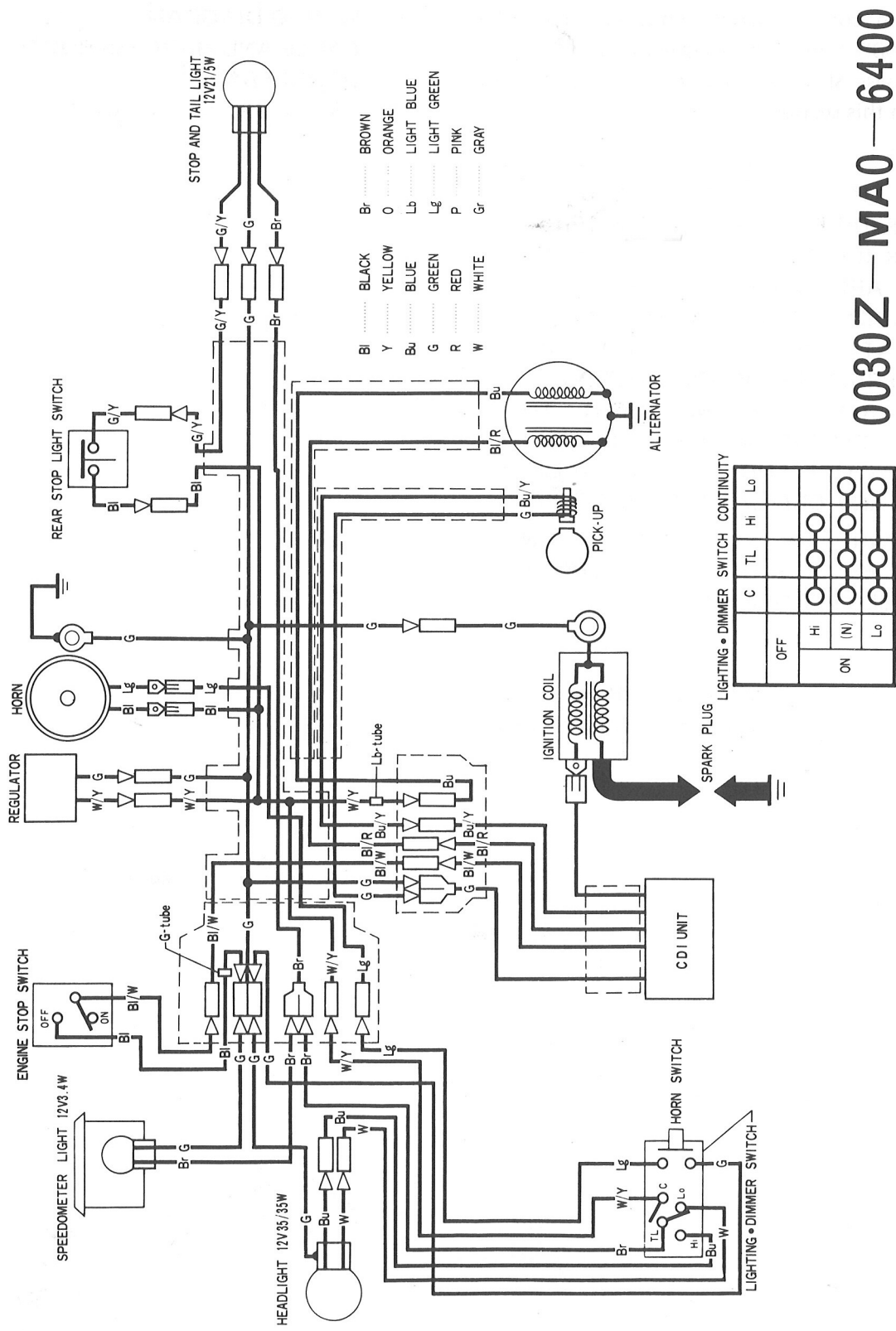
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WIRING DIAGRAM

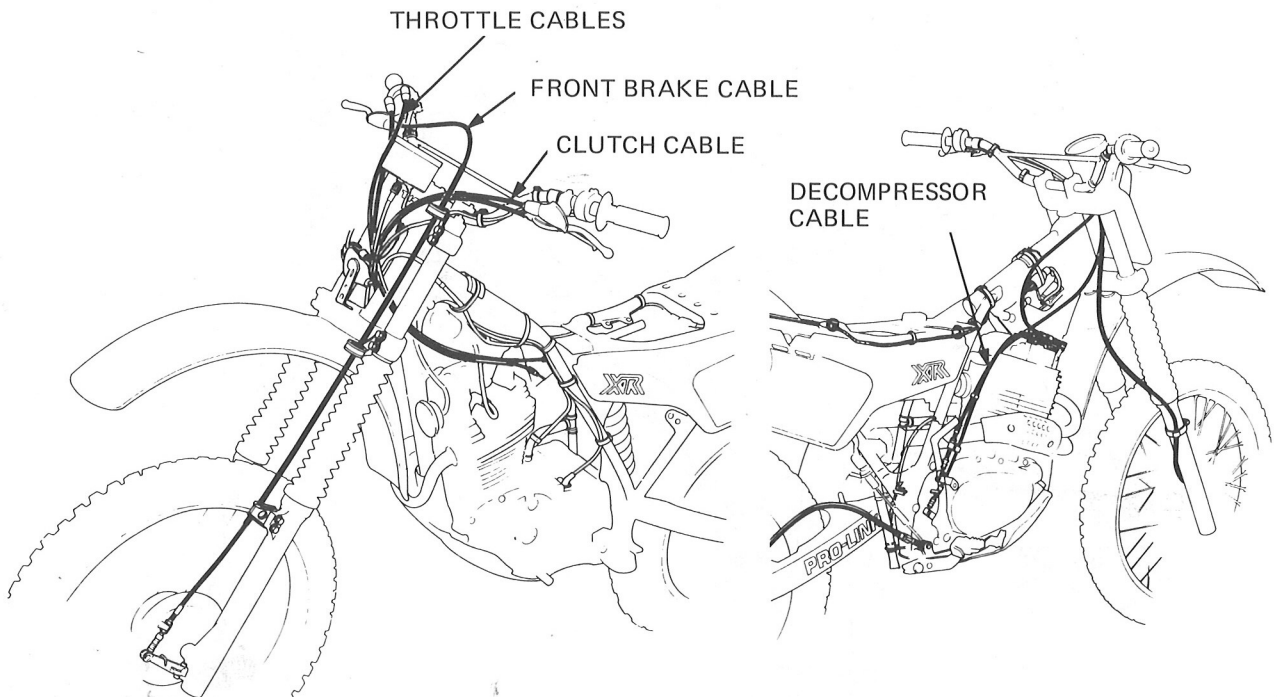
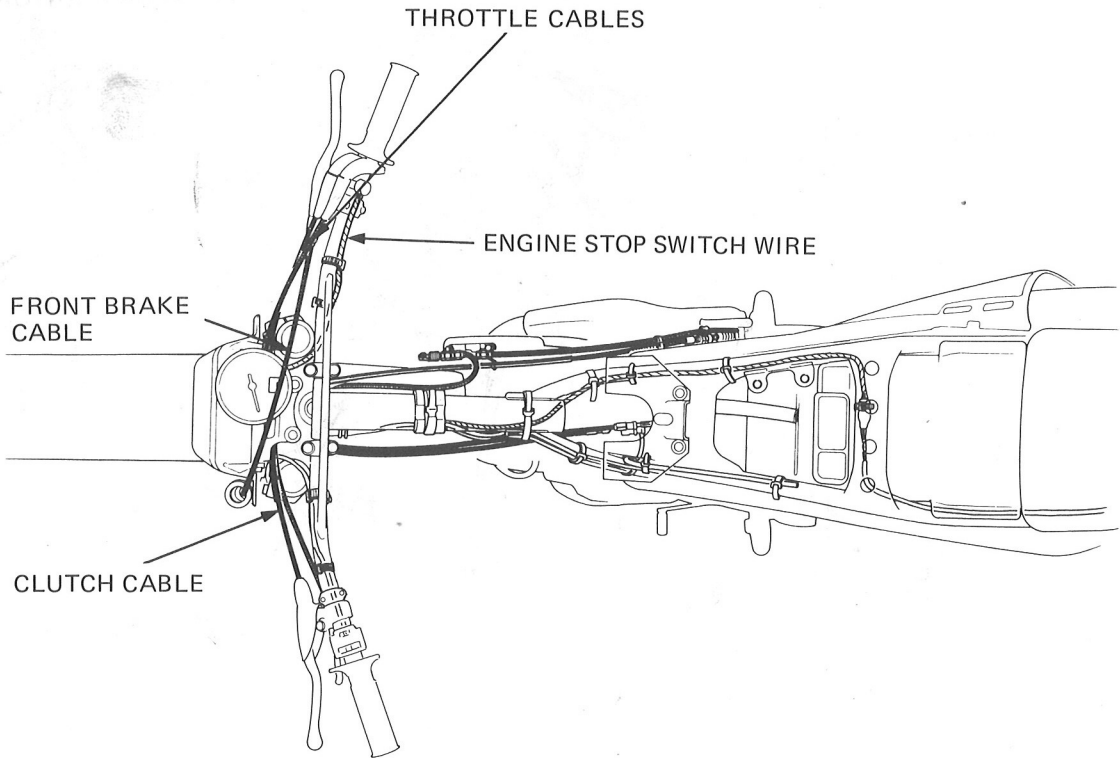


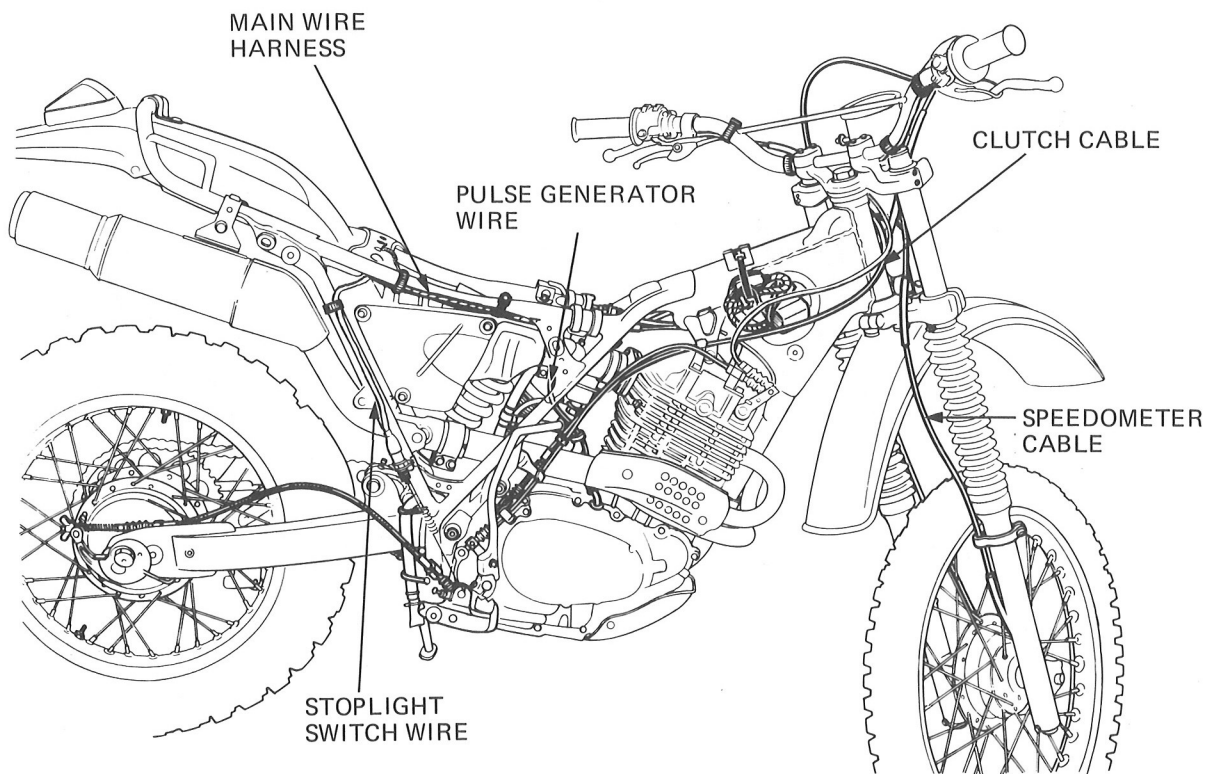
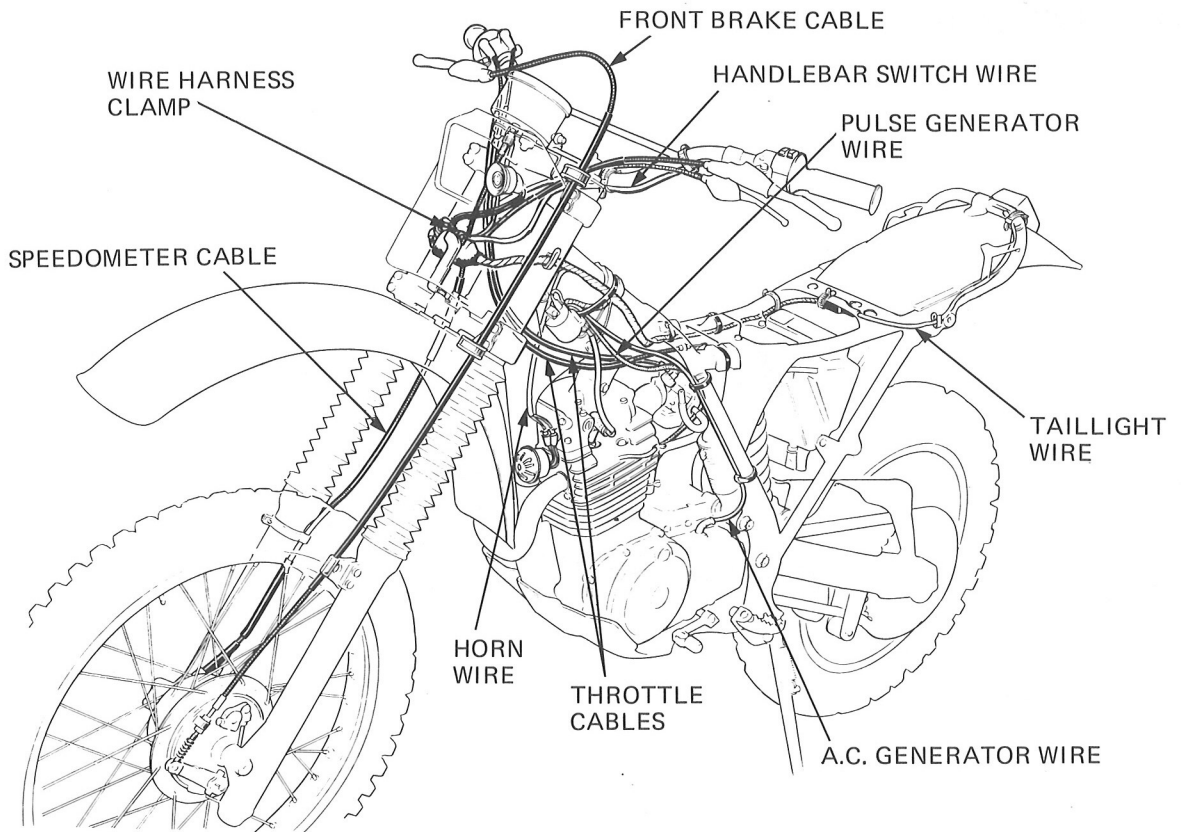
0030Z — MA0 — 6400

		LIGHTING • DIMMER SWITCH CONTINUITY			
		C	TL	Hi	Lo
OFF					
	Hi			○	○
ON	(N)	○	○	○	○
	Lo	○	○		



CABLE AND HARNESS ROUTING







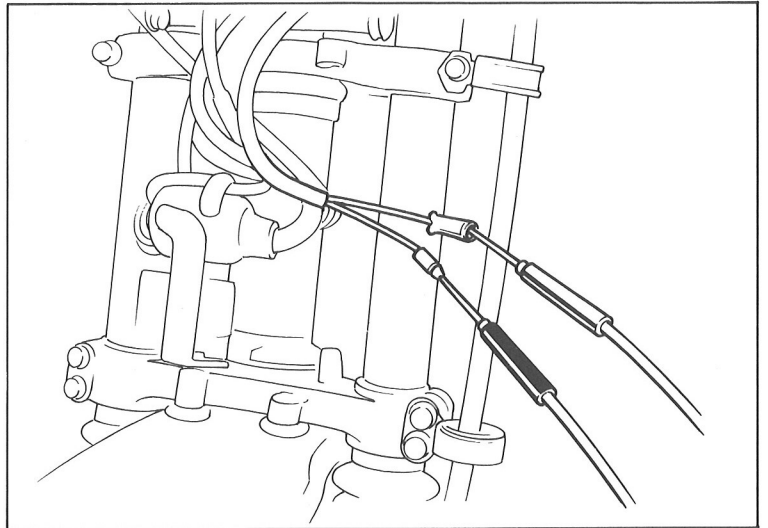
HANDLEBAR SWITCHES

CONTINUITY TESTS

Remove the headlight case (page 13-3).
Disconnect the handlebar switch wires and check for continuity between connectors.

Headlight/dimmer Switch Continuity

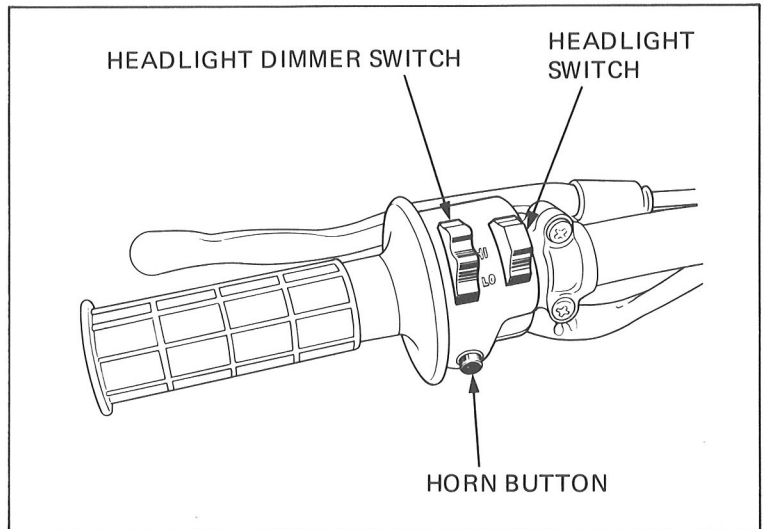
HEADLIGHT SWITCH	DIMMER SWITCH	COLOR CODE			
		W/Y	Br	Bu	W
OFF					
ON	Hi	○	○	○	
	(N)	○	○	○	○
	Lo	○	○		○



Horn Button Continuity

	Lg	G
	○	○

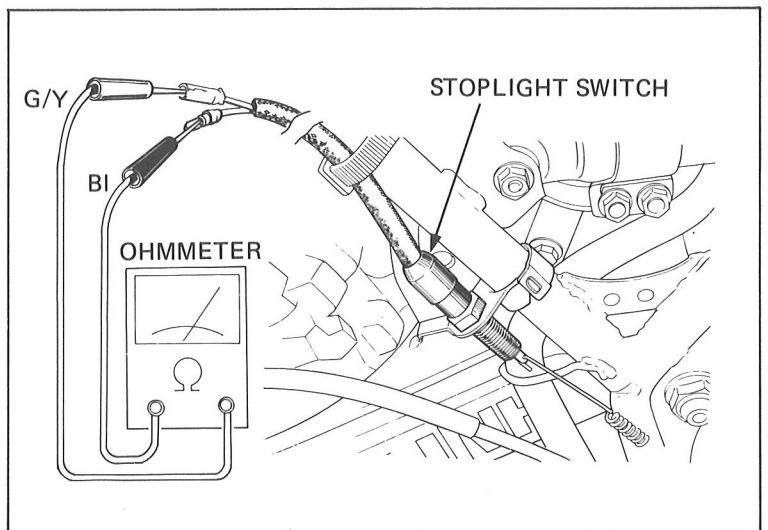
Lg to G with button depressed.
No continuity with button released.



BRAKE STOPLIGHT SWITCH

Check rear brake stoplight switch continuity with rear brake applied.

COLOR CORD	BI	G/Y
ON	○	○
OFF		





MEMO



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